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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,270	09/26/2006	Tadashi Yokoi	2006_1597A	3403

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EXAMINER	
PRAGER, JESSE M	
ART UNIT	PAPER NUMBER
4137	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,270	YOKOI, TADASHI	
	Examiner	Art Unit	
	JESSE PRAGER	4137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/26/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The amendment filed 9/26/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

[0029] "the control means calculates the circumferential velocity of the blade from the revolution measured by the revolution measuring means"

[0030] "the control means calculates the circumferential velocity of the blade from the revolution of the wind turbine measured by the revolution measuring means"

Previously, the controls means was not specified to calculate the circumferential velocity of the blade. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

2. Claim 19 is objected to because of the following informalities: the term "revolution" on lines 4-6 appears like it should be replaced with "circumferential velocity". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 16-20 invoke 35 U.S.C. 112, 6th paragraph since it has means plus function language structure, uses functional language and is not modified by sufficient structure. The claims are rejected under 35 U.S.C. 112, 1st and 2nd paragraphs.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 16-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In regards to claims 16-20, the controlling means does not have any structural features that enable one skilled in the art to make and use this invention. Additionally in regards to claims 19, and 20, the control means was specified to calculate the circumferential velocity of the blade, and thus the claim depends on parts of the specification deemed to be new matter.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim element "control means for controlling" is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Rangi et al. (US Patent 4,082,479 herein "Rangi").

Rangi discloses a wind turbine blade (10) featured comprising a wind receiving plate (11a, 11b) and an openable and closeable pivot (16), said openable and closable wind receiving plate being disposed in a cutout made partially in the wind-shaped surface of a blade generating lift force (Fig. 6), as a substitute for the wing portion cut out, and an actuator (spring 12) placed in said cutout to open and close said wind receiving plate.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 15 is also rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. (US Patent 4,427,253 herein "Seki") in view of Shimmel (US Patent 4,715,782).

Seki discloses a wind turbine blade (14) featured by comprising a wind receiving plate (15) having a wind receiving surface. Seki discloses an openable and closable wind receiving plate (15) being disposed in a cutout made partially in the wing-shaped surface of a blade generating a lift force (Fig. 9-13), as a substitute for the wing portion thus cut out.

Seki discloses that an actuator controls the receiving plate element (15, Col. 3 lines 57-64) but is silent about whether the actuator is placed in the cutout to open and close the wind receiving plate. However, Shimmel discloses an

actuator (34, 46) placed in the cutout to open and close the wind receiving plate (120). From Shimmel's disclosure, it would be obvious to one of ordinary skill at the time of the invention to manufacture Seki's blade with an actuator in the cutout.

12. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki in view of Shimmel.

Seki discloses a vertical axis wind turbine (13) featured by comprising a wind receiving plate (14). Seki also discloses manual or automatic known control means for controlling the opening and closing operation of said wind receiving plate through a hydraulic or pneumatic device (Col. 2 58-61). Seki is silent about whether the receiving plate is disposed in a cutout made partially in the wing-shaped surface as a substitute for the wing portion. Seki discloses an actuator, but is silent about whether the actuator is placed in the cut out to open and close the wind receiving plate. In regards to claim 18, Seki does not disclose a revolution measuring means for measuring the revolutions of the wind turbine, so that the opening of the receiving plate is controlled in accordance to the revolutions measured.

In the third embodiment (Fig. 9-13) Seki discloses that the wind receiving plate is disclosed in a cutout made partially in the wind-shaped surface of the blade (1), as describe above in claim 15. It would have been obvious to manufacture the wind receiving plate 14 of embodiment one (Fig. 3, 4) with the cutout, as demonstrated by Seki in a separate embodiment (Fig. 9-13) of the

invention because one of ordinary skill in the art would recognize that the structure of the third embodiment is applicable to the structure of the first embodiment.

Seki discloses that an actuator controls the receiving plate element (14, Col. 2 line 54-61) in the first embodiment (Fig. 3, Fig. 4) but is silent about whether the actuator is placed in the cutout to open and close the wind receiving plate. However, Shimmel discloses an actuator (34, 46, Fig. 9-11) placed in the cutout to open and close the wind receiving plate (120). This demonstrates a hydraulic or pneumatic device suggested by Seki (Col. 2 line 62). From Shimmel's disclosure, one of ordinary skill at the time of the invention would have been able to manufacture Seki's blade with an actuator in the cutout.

In regards to claim 18, Shimmel discloses that a revolution measuring means (sensor par. 13) could be used for measuring the revolutions of the wind turbine, so that the opening of the receiving plate is controlled in accordance to the revolution measured (Col. 3 line 21-25). *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994), the court ruled that despite that the prior art teaches away from embodiments, the applicant "asserted no discovery beyond what was known in the art". Similarly, despite that the sensor is disclosed as a potential problem to overcome in the art, the use of a sensor to initiate an opening or a closing of a wind receiving plate represents prior art.

It would have been obvious to make Seki's wind turbine with the control means using a prescribed revolution limit, as taught by Shimmel and as

commonly known in the art, to activate the aerodynamic control to function at the time of starting, but not during normal operation (Seki Col. 1, lines 42-47). In regards to the limitation of the use of a prescribed set point, one of ordinary skill in the art at the time of the invention would have been capable to using Shimmel's rotational control with a prescribed set point for the opening and closing operation of the receiving plate. It would have been obvious to apply a prescribed set point as oppose to other control schemes, because this type of control is simple and cost effective.

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki in view of Shimmel as applied above to claim 16, and in further view of Jamieson et al. (US Patent Application Publication 2003/0230898 herein "Jamieson").

Seki does not disclose wind speed measuring means for measuring a primary velocity. However, Jamieson discloses a wind speed measuring means (an anemometer in par. 23) for measuring a primary wind velocity, so that the extending and retracting of the extension (310) or wind receiving plate is controlled in accordance with the wind velocity value measured by said wind speed measuring means (par. 23).

The extending and retracting of the extension (310) of Jamieson to improve efficiency at low speeds, is comparable to the opening and closing of the wind receiving plate (14) of Seki at start up. It would have been obvious to manufacture Seki's wind turbine blade with the anemometer of Jamieson and control the receiving plate to open and close based on the primary wind speed to

improve performance at lower speeds, as demonstrated by Jamieson. In regards to the limitation of the use of a prescribed set point, one of ordinary skill in the art at the time of the invention would have been capable of using Jaimieson velocity control with a prescribed set point for the opening and closing operation of the receiving plate. It would have been obvious to apply a prescribed velocity setpoint as oppose to other velocity control schemes, because this type of control is simple and cost effective.

14. Claims 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki in view of Shimmel as applied above to claim 18, and in further view of Seki (US Patent Application Publication 2004/0041405).

The Seki in view of Shimmel does not disclose a control means to calculate the circumferential velocity of the blade from the revolution measured by said revolution measuring means so that the opening and closing operation of the wind receiving plate is controlled by a prescribed circumferential velocity. (Note that the claim uses the term "revolution", however based on the structure of the other claims, it seems that the applicant intended to use "circumferential velocity".)

In regards to claim 20, Seti in view of Shimmel discloses a wind speed measuring means for measuring primary wind velocity (sensor par. 13) as features of prior art. Seti in view of Shimmel does not disclose a revolution measuring means, and a control means which calculates the circumferential

velocity of the blade so that the operation of the receiving plate is controlled by the circumferential velocity ratio.

However, Seki '1405, discloses a control means (Fig. 3, par. 29) to calculate the circumferential velocity ratio for the functions of a start-up and acceleration, tip speed ratio control, and braking. Seki '1405 discloses a wind speed measuring means (10) for measuring primary wind velocity, a revolution measuring means (8), a control means (12, 13) which calculates the circumferential velocity and circumferential ratio (described in paragraph 27) and operates the generator is placed in a no-load state based on the prescribed circumferential velocity ratio (or reference tip speed ratio).

It would have been obvious at the time of the invention to control the Seki combination such that the wind receiving plates deploy based on a prescribed circumferential velocity ratio as demonstrated by Seki '1405, as an alternative means of controlling the deploying system as previously described using a revolution set point. This would have been in the capabilities of one of ordinary skill since both variables are common knowledge in the art and one of ordinary skill could derive the other by the multiplication of known constants and dividing by the wind speed.

In regards to claim 19, one of ordinary skill in the art, would have been able to use the circumferential velocity prescribed set point, instead of the circumferential velocity ratio set point, or revolution rate. It would have been obvious to use the circumferential velocity, since this value is determined in Seki '1405 control system, it is

common knowledge in the art, and one of ordinary skill could derive this value by the multiplication of rotation rate by the radius.Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE PRAGER whose telephone number is (571)270-1412. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jackson can be reached on (571)272-4697. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P./ 5/7/2009
Examiner, Art Unit 4137

/Gary Jackson/
Supervisory Patent Examiner
Art Unit 4137
5/24/09